

IN THE CLAIMS:

The following is a listing of all the claims as they currently stand. Kindly delete claims 1-58 have been previously deleted. Kindly delete claims 59-61 and add claims 62-81, as noted below.

1.-61. (Canceled)

62. (New) An atherectomy catheter comprising:  
a catheter body comprising a proximal portion, a distal portion, and a longitudinal axis;

a cutting window disposed on the distal portion of the catheter body;  
an axially movable material capture device that moves between a first axial position in which the material capture device is disposed within the catheter body, and a second axial position in which the material capture device extends outwardly from the cutting window and directs material from the body lumen into the cutting window.

63. (New) The atherectomy catheter of claim 62 wherein the material capture device is rotatable.

64. (New) The atherectomy catheter of claim 62 further comprising a cam surface disposed in the distal portion of the catheter body that directs the material capture device out of the cutting window.

65. (New) The atherectomy catheter of claim 62 wherein the material capture device comprises a sharpened edge.

66. (New) The atherectomy catheter of claim 65 wherein the sharpened edge penetrates into the material in the body lumen.

67. (New) The atherectomy catheter of claim 65 wherein the material capture device comprises a curved surface adjacent the sharpened edge.

68. (New) The atherectomy catheter of claim 62 wherein the first axial position is distal to the second axial position.

69. (New) The atherectomy catheter of claim 62 further comprising a drive wire coupled to the material capture device to facilitate movement between the first axial position and the second axial position.

70. (New) The atherectomy catheter of claim 62 wherein the material capture device in the first axial position closes the cutting window.

71. (New) The atherectomy catheter of claim 62 further comprising an atraumatic distal tip on the distal portion of the catheter.

72. (New) An atherectomy catheter comprising:  
a catheter body comprising a proximal portion and a distal portion that defines an outer diameter;  
a cutting window disposed on the distal portion of the catheter body;  
an axially movable material removal assembly that moves between a first axial position in which the material removal assembly is disposed within the outer diameter of the catheter body, and a second axial position in which the material removal assembly extends outwardly from the cutting window beyond the outer diameter and directs material from the body lumen into the cutting window.

73. (New) The atherectomy catheter of claim 72 wherein the material removal assembly is at least partially rotatable.

74. (New) The atherectomy catheter of claim 72 further comprising a cam surface disposed in the distal portion of the catheter body that directs the material removal assembly out of the cutting window.

75. (New) The atherectomy catheter of claim 72 wherein the material removal assembly comprises a sharpened edge.

76. (New) The atherectomy catheter of claim 75 wherein the sharpened edge penetrates into the material in the body lumen.

77. (New) The atherectomy catheter of claim 75 wherein the material removal assembly comprises a curved surface adjacent the sharpened edge.

78. (New) The atherectomy catheter of claim 72 wherein the first axial position is distal to the second axial position.

79. (New) The atherectomy catheter of claim 72 further comprising a drive wire coupled to the material removal assembly to facilitate movement between the first axial position and the second axial position.

80. (New) The atherectomy catheter of claim 72 wherein the material removal assembly in the first axial position closes the cutting window.

81. (New) The atherectomy catheter of claim 72 further comprising an atraumatic distal tip on the distal portion of the catheter.